APPENDIX - CLAIMS

1. (Previously Presented) A method comprising forming an admixture of
a solvent,
an additive and
a polymer selected from the group consisting of a precursor to an electrically conductive polymer and an electrically conductive polymer,
said polymer being soluble in said solvent,
said polymer not being substantially soluble in said additive in the absence of said solvent;
said additive provides local mobility to said polymer to allow said polymer to associate with one another to achieve a crystalline state; and
removing or partly removing said solvent, substantially leaving said additive therein as remaining additive, said remaining additive provides local mobility to said polymer to achieve said crystalline state thereby comprising a polycrystalline material, said polycrystalline material is characterized by a degree of crystallinity regions and
a degree of amorphous regions, said degree of crystallinity regions and said degree of amorphous regions are selected by selecting the composition of said additive, and the amount of said additive.

2. (Previously Presented) A method according to claim 1, wherein said admixture is electrically conductive and has an isotropic electrical conductivity.

3. (Previously Presented) A method according to claim 1, wherein said additive is selected from the group consisting of plasticizers and diluents.

4. (Previously presented) A method according to claim 1, wherein said additive is a plasticizer is selected from the group consisting of: Adipic acid plasticizers, Azelaic acid plasticizers, Benzoic acid plasticizers, Citric acid plasticizers, Dimer acid plasticizers, Epoxy plasticizers, Fumaric acid plasticizers, Glycerol plasticizers, Isobutyrate plasticizers, Lauric acid plasticizers, Linoleic acid plasticizers, Maleic acid plasticizers, Sebacic acid plasticizers, Stearic acid plasticizers, Succinic acid plasticizers, Sulfonic acid plasticizers, Terpentines, Terpentine plasticizers, Siloxanes, Polysiloxanes, Ethylene glycols, Polyethylene glycols, Polyesters, Sucrose plasticizers, Mellitates, Myristic acid plasticizers, Oleic acid plasticizers, Palmitic acid plasticizers, Paraffin plasticizers, Phosphoric acid plasticizers, Phthalic acid plasticizers, Ricinoleic acid plasticizers, Tartaric acid plasticizers, Trimellitic acid plasticizers, Glycol plasticizers, Glycolates, Hydrocarbons, Phosphonic acid plasticizers, Polysilanes.

5. (Previously Presented) A method according to claim 1, wherein said polymer is selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polyparaphenylenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes formed from soluble precursors, combinations thereof and blends thereof with other polymers and copolymers of the monomers thereof.

6. (Previously Presented) A method according to claim 1, wherein said, solvent when removed or partly removed forms a film which is further stretch oriented.

7. (Previously Presented) A method comprising:

forming a combination of a first material, a second material and a solvent:

said first material is selected from the group consisting of a precursors to an electrically conductive polymer and an electrically conductive polymer;

said second material being soluble in said solvent, said second material not being substantially soluble in said first material in the absence of said solvent.

8. (Previously Presented) A method according to claim 7, wherein said combination is electrically conductive and has a conductivity which is isotropic.

9. (Previously presented) A method according to claim 7, wherein said polymer is selected from the group consisting of substituted and unsubstituted polyparaphenylene vinylenes, polythianaphthenes, polyparaphenylenes, polyanilines, polythiophenes, polyazines, polyfurans, polypyrroles, polyselenophenes, poly-p-phenylene sulfides, polyacetylenes formed from soluble precursors, combinations thereof and blends thereof with other polymers and copolymers of the monomers thereof.

10. (Previously presented) A method according to claim 7, wherein said second material is selected from the group consisting of:
Adipic acid plasticizers, Azelaic acid plasticizers, Benzoic acid plasticizers, Citric acid plasticizers, Dimer acid plasticizers, Epoxy plasticizers, Fumaric acid plasticizers, Glycerol plasticizers, Isobutyrate plasticizers, Lauric acid plasticizers, Linoleic acid plasticizers, Maleic acid plasticizers, Sebacic acid plasticizers, Stearic acid plasticizers, Succinic acid plasticizers, Sulfonic acid plasticizers, Terpentines, Terpentine plasticizers, Siloxanes, Polysiloxanes, Ethylene glycols, Polyethylene glycols, Polyesters, Sucrose plasticizers, Mellitates, Myristic acid plasticizers, Oleic acid plasticizers, Palmitic acid plasticizers, Paraffin plasticizers, Phosphoric acid plasticizers, Phthalic acid plasticizers, Ricinoleic acid plasticizers, Tartaric acid plasticizers, Trimellitic acid plasticizers, Glycol plasticizers, Glycolates, Hydrocarbons, Phosphonic acid plasticizers, Polysilanes.

11. (Previously presented) A method comprising forming a polyaniline material having at least one crystal grain, said material having isotropic electrical conductivity.

12. (Previously presented) A method comprising:
providing solution of polymers in a solvent;
said polymers are selected from the group consisting of precursors to electrically conductive polymers and electrically conductive polymers;
providing mobility to said polymers to allow said polymers to associate with one another to achieve a crystalline state by adding a plasticizer to said solvent;
said plasticizer being soluble in said solvent. said plasticizer not being substantially soluble in said polymer in the absence of said solvent.

13. (Previously Presented) A method according to claim 12, wherein said step of providing mobility is provided by adding an additive to said solution.

14. (Currently amended) A method according to claim 13, wherein solid additive is ~~selected~~ selected from the group consisting of a plasticizer and a diluent.

15. (Previously Presented) A method according to claim 1, wherein said additive contains substituents which facilitates the miscibility of said polymer and said additive.

16. (Previously Presented) A method according to claim 1, wherein said additive disrupts aggregation of said polymer.

17. - 19 (Cancelled)

20. (Previously Presented) A method according to claim 1, wherein said additive deaggregates said polymer.

21. (Cancelled)

22. (Previously Presented) A method according to claim 1, wherein said solvent is extracted from said admixture by a technique selected from the group consisting of solvent extraction and evaporation.

23. (Previously Presented) A method according to claim 1, wherein said additive is first added to a solvent and thereafter an electrically conducting polyaniline is added which becomes neutralized upon addition to said admixture.

24. (Previously Presented) A method according to claim 1, wherein said admixture contains a polyaniline, said additive, and an oxidant.

25. (Previously Presented) A method according to Claim 1, wherein said additive includes a plasticization effect.

26 - 39 (Cancelled)

40. (Previously Presented) A method according to claim 1 wherein said additive is an oxidant.

41. (Previously Presented) A method according to claim 7 wherein said material is an oxidant.

42. (Previously Presented) A method according to claim 12 wherein said plasticizer is an oxidant.

43. - 45. (Cancelled)

46. (New) A method comprising forming an admixture of
a solvent selected from the group consisting of NMP, m-Cresol and a combination of NMP/m-cresol;
an additive selected from the group consisting of poly-co-dimethyl, amino siloxane, poly glycol diacid, 3,6,9-trioxaundecanoic acid, poly(ethylene glycol) tetrahydrofurfuryl ether, glycerol triacetate, and epoxidized soy bean oil.
polyaniline,
said polyaniline being soluble in said solvent,

said polyaniline not being substantially soluble in said additive in the absence of said solvent; said additive provides local mobility to said polymer to allow said polymer to associate with one another to achieve a crystalline state; and
removing or partly removing said solvent, substantially leaving said additive therein as remaining additive, said remaining additive provides local mobility to said polyaniline to achieve said crystalline state thereby comprising a polycrystalline material, said polycrystalline material is characterized by a degree of crystallinity regions and a degree of amorphous regions, said degree of crystallinity regions and said degree of amorphous regions are selected by selecting the composition of said additive, and the amount of said additive.
said admixture being electrically conductive and having an isotropic electrical conductivity.

47. (New) The method according to claim 46, wherein said solvent is NMP and said additive is epoxidized soy bean oil.

48. (New) The method according to claim 46, wherein said solvent is NMP and said additive is poly-co-dimethyl, amino siloxane.

49. (New) The method according to claim 46, wherein said solvent is NMP and said additive is poly glycol diacid.

50. (New) The method according to claim 46, wherein said solvent is NMP and said additive is

3,6,9-trioxaundecanoic acid.

51. (New) The method according to claim 46, wherein said solvent is NMP and said additive is

poly(ethylene glycol) tetrahydrofurfuryl ether.

52. (New) The method according to claim 46, wherein said solvent is NMP and said additive is glycerol triacetate.